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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,265	08/19/2003	Toshiki Hirano	HSJ920030072US1	4667
7590 Wagner Murabito & Hao LLP 123 Westridge drive Watsonville, CA 95076			EXAMINER KLIMOWICZ, WILLIAM JOSEPH	
			ART UNIT 2627	PAPER NUMBER
			MAIL DATE 09/05/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/643,265

**Applicant(s)**

HIRANO ET AL.

**Examiner**

William J. Klimowicz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 6, 2007 has been entered.

### *Claim Status*

Claims 1-8 are currently pending, of which, claims 1, 4, 5 and 8 are independent.

### *Claim Rejections*

Insofar as the claims can be best understood in light of the Applicant's disclosure, the following rejections, articulated in detail, are deemed *prima facie* appropriate, based on a preponderance of the evidence.

As recited MPEP§2106:

Office personnel are to give claims their ***broadest reasonable interpretation*** in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). ***Limitations appearing in the specification but not recited in the claim are not read into the claim.*** *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) ("During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow. . . . The reason is simply that during patent prosecution when claims can be amended, ambiguities should be recognized, scope and breadth of language explored, and clarification imposed. . . . An essential purpose of patent examination is to fashion claims that are precise, clear, correct, and

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unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process.”). [Emphasis in bold italics added].

As set forth in the MPEP§ 706, “the standard to be applied in all cases is the ‘*preponderance of the evidence*’ test. In other words, *an examiner should reject a claim* if, in view of the prior art and evidence of record, *it is more likely than not that the claim is unpatentable.*” .”) Emphasis in bold italics added.

Moreover, one should keep in mind that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Moreover still, a *preamble* is generally not accorded any patentable weight where it *merely recites the purpose of a process or the intended use of a structure*, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Additionally, the following 35 USC 103(a) rejections are being made in light of a recent Supreme Court opinion.

The Supreme Court has issued its opinion in KSR, regarding the issue of obviousness under 35 U.S.C. 5 103(a) when the claim recites a combination of elements of the prior art. *KSR Int’l Co. v. Teleflex, Inc.*, No. 04-1350 (U.S. Apr. 30, 2007).

In the decision, the Court reaffirmed the Graham factors in the determination of obviousness under 35 U.S.C. 5 103(a), inclusive of the four factual inquiries under Graham, which are:

- (a) determining the scope and contents of the prior art;
- (b) ascertaining the differences between the prior art and the claims in issue;
- (c) resolving the level of ordinary skill in the pertinent art; and
- (d) evaluating evidence of secondary consideration.

*Graham v. John Deere*, 383 U.S. 1, 17-18, 148 USPQ 459,467 (1966).

It is noted that the Court did not totally reject the use of “teaching, suggestion, or motivation” as a factor in the obviousness analysis. Rather, the Court recognized that a showing of “teaching, suggestion, or motivation” to combine the prior art to meet the claimed subject matter could provide a helpful insight in determining whether the claimed subject matter is obvious under 35 U.S.C. 103(a).

More noteworthy, however, the Court rejected a rigid application of the “teaching, suggestion, or motivation” (TSM) test, which required a showing of some teaching, suggestion, or motivation in the prior art that would lead one of ordinary skill in the art to combine the prior art elements in the manner claimed in the application or patent before holding the claimed subject matter to be obvious.

The Court noted that the analysis supporting a rejection under 35 U.S.C. 103(a) should be made explicit, and that it was “important to identify a reason that would have prompted a person

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of ordinary skill in the relevant field to combine the [prior art] elements” in the manner claimed.

The Court specifically stated:

Often, it will be necessary . . . to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an ***apparent reason*** to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis ***should be made explicit***.

*KSR*, slip op. at 14 (emphasis added).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koshikawa et al. (JP 03095717 A) in view of Zhang et al. (US 6,396,667 B1).

As per claim 1 and 5, Koshikawa et al. (JP 03095717 A) discloses a disk drive (e.g., see FIG. 4(a, b)) and an airflow shroud (2) for a slider (3), comprising: a frame portion (2) having an opening (see FIGS. 4 and 5, bottom facing disk (6)) suitable for exposing an air bearing surface of a slider (3) for a disk drive, the frame portion (2) surrounding the slider (3); and an attachment portion (e.g., top surface of (2) - see FIG. 3(a) and FIG. 3(b) adapted for attachment

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to a suspension load beam (8) of a disk drive (e.g., see, *inter alia*, FIGS. 3-5), wherein the frame portion (2) is configured to not surround the suspension load beam (8).

As per claims 2 and 6, has side portions (7) forming the opening and a tapered shape between each side portion and the opening - see FIGS. 3-5 - note the tapered portions are not disclosed in the embodiment of FIGS. 1-2 of Koshikawa et al. (JP 03095717 A).

Per claim 1 and claim 5, however, Koshikawa et al. (JP 03095717 A) does not expressly disclose a moving-slider-type microactuator coupled to the slider.

Zhang et al. (US 6,396,667 B1) discloses a slider and head suspension of an analogous type disclosed by Koshikawa et al. (JP 03095717 A), but additionally expressly teaches providing a moving-slider-type microactuator (including 66, 64, 176) coupled to a slider (24) for the purpose of providing a small microactuator that advantageously allows high resolution head positioning (e.g., see, *inter alia*, COL. 1, line 39 *et. seq.*)

Given the express teachings and motivations, as espoused by Zhang et al. (US 6,396,667 B1), it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the moving-slider-type microactuator as taught by Zhang et al. (US 6,396,667 B1), to the slider of Koshikawa et al. (JP 03095717 A).

The rationale is as follows: one of ordinary skill in the art would have been motivated to provide the moving-slider-type microactuator as taught by Zhang et al. (US 6,396,667 B1), to the slider of Koshikawa et al. (JP 03095717 A) in order to provide a small microactuator that advantageously allows high resolution head positioning (e.g., see, *inter alia*, COL. 1, line 39 *et. seq.*)

Additionally, as per claims 3 and 7, Koshikawa et al. (JP 03095717 A), in combination with Zhang et al. (US 6,396,667 B1), however, remains silent as to the specific relationships set forth in claims 3 and 7, i.e., wherein between about 50 to 100 micrometers of the slider (SV) are exposed through the opening of the frame portion.

Given the teachings of Koshikawa et al. (JP 03095717 A), however, to expressly minimize turbulence effects on the transducer and its associated components, wherein only a slight portion of the air bearing slider is exposed through the opening as seen in FIG. 5b, it would have been obvious to one of ordinary skill in the art at the time of the alleged invention to provide an approximate range of the slider exposure through the opening, including the range of “about 50 to 100 micrometers of the slider” in the course of routine optimization/experimentation and thereby obtain various standard optimized relationships including those set forth in claims 3 and 7.

That is, given the teachings of Koshikawa et al. (JP 03095717 A), however, to expressly minimize turbulence effects on the transducer and its associated components, wherein only a slight portion of the air bearing slider is exposed through the opening as seen in FIG. 5b, it would have been obvious to one of ordinary skill in the art at the time of the alleged invention to provide an approximate range of the slider exposure through the opening, including the range of “about 50 to 100 micrometers of the slider” in the course of routine optimization/experimentation and thereby obtain various standard optimized relationships including those set forth in claims 3 and 7 in order to protect the majority of the slider from the impinging effects of turbulent air on the slider by providing a minimal exposure of the slider, e.g., “about 3 micrometers,” while also providing sufficient slider shroud protection while allowing enough the



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of the air bearing surfaces of the slider to provide the desired floating quality, e.g., an upper range of exposure at “about 50 micrometers.” Such a range of slider exposure through the frame opening of “about 50 to 100 micrometers of the slider” is considered to be within the level of ordinary skill in the art, given the teachings and suggestion of Koshikawa et al. (JP 03095717 A).

Additionally, the law is replete with cases in which when the mere difference between the claimed invention and the prior art is some range, variable or other dimensional limitation within the claims, patentability cannot be found.

It furthermore has been held in such a situation, the Applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Moreover, the instant disclosure does not set forth evidence ascribing unexpected results due to the claimed dimensions. See *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338 (Fed. Cir. 1984), which held that the dimensional limitations failed to point out a feature which performed and operated any differently from the prior art.

Claims 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koshikawa et al. (JP 01-158605 A) in view of Mei et al. (US 6,611,399 B1).

As per claims 4 and 8, Koshikawa (JP 01-158605 A) discloses an airflow shroud capable of being used with a moving-head-type microactuator in a disk drive, comprising: a plate portion (e.g., rear portion of shroud (31)) attachable to a slider (31), and a recessed portion (e.g., window

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within shroud (31)) corresponding to a moving-head-type microactuator of the slider, when positively coupled to such slider. adapted for attachment to a suspension load beam (8) of a disk drive (e.g., see, *inter alia*, FIGS. 3-5), wherein said load beam (16) is not surrounded by said airflow shroud.

As per claims 4 and 8, *assuming* that the limitations of claims 4 and 8 *positively* require the moving-head-type microactuator on the slider (11), Mei et al. (US 6,611,399 B1) discloses such a conventional moving-head-type microactuator.

Given the express teachings and motivations, as espoused by Mei et al. (US 6,611,399 B1), it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the moving-head-type microactuator as taught by Mei et al. (US 6,611,399 B1), with the shroud covering of Koshikawa (JP 01-158605 A).

The rationale is as follows: one of ordinary skill in the art would have been motivated to provide the moving-head-type microactuator as taught by Mei et al. (US 6,611,399 B1), with the shroud covering of Koshikawa (JP 01-158605 A), in order to allow fine-tuned vertical and lateral head displacement at the slider level, as advantageously disclosed by Mei et al. (US 6,611,399 B1), while simultaneously obstructing the convergence of leakage flux from outside of a magnetic pole associated with the slider, as espoused by Koshikawa (JP 01-158605 A).

### ***Response to Arguments***

Applicants' arguments entered into consideration on August 6, 2007 have been fully considered but they are not persuasive.

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The Examiner notes Applicant's arguments pertaining to the rejection of claims 1-3 and 5-7 have been rendered moot by the new grounds of rejection pertaining to the aforementioned claims.

As per the rejections of claims 4 and 8 under 35 U.S.C. 103(a) as being unpatentable over Koshikawa et al. (JP 01-158605 A) in view of Mei et al. (US 6,611,399 B1), the Applicant opines at page 8 of the Response filed on August 6, 2007:

Kosikawa [sic, Koshikawa] is cited as teaching an airflow shroud. However, Applicants understand Kosikawa [sic] to teach a magnetic flux shroud (translated abstract). An airflow shroud is very different from a magnetic flux shroud. Furthermore, Applicants submit that Kosikawa [sic] fails to teach or suggest "an attachment portion adapted for attachment with said suspension load beam of a disk drive wherein said frame portion is configured to not surround said suspension load beam," as claimed.

Mei fails to remedy the deficiencies of Kosikawa [sic] because Mei also fails to teach or suggest "an attachment portion adapted for attachment with said suspension load beam of a disk drive wherein said frame portion is configured to not surround said suspension load beam," as claimed.

For this rational, Claims 4 and 8 are patentable over Kosikawa [sic] in view of Mei because Kosikawa [sic] alone or in combination with Mei fail to teach or suggest the claimed embodiments of the present invention.

Emphasis in original.

Contrary to the Applicants' allegations, however, the facts as unambiguously evidenced by Koshikawa et al. (JP 01-158605 A) in view of Mei et al. (US 6,611,399 B1) clearly show otherwise.

The Examiner readily agrees with the Applicant that one of the functions of the shield of Koshikawa (JP 01-158605) is to provide protection of leaking magnetic flux from the head.

Koshikawa (JP 01-158605 A) even admittedly fails to expressly mention that the shield functions as an airflow shroud. This however, is not dispositive. Moreover, the claimed structure as it pertains to the airflow shroud clearly reads on the shield of Koshikawa (JP 01-158605 A). By providing the shield over the sides of the slider and back of the slider (except for a recess in the back of the plate of the shield), the shield inherently and more specifically, must necessarily function also as an airflow shroud, since the slider side edges and tops do not directly impinge air because the shielding covers the slider except at the surface facing the media, and a recess in the back of the slider. That is, as per the claimed invention, Koshikawa (JP 01-158605 A) discloses an airflow shroud *capable* (again, here is “intended use” - see discussion of intended use, *supra*) of being used with a moving-head-type microactuator in a disk drive, comprising: a plate portion (e.g., rear portion of shroud (31)) attachable to a slider (31), and a recessed portion (e.g., window within shroud (31)) corresponding to a moving-head-type microactuator of the slider, when, *or if ever*, positively coupled to such slider.

Even *assuming* that the limitations of claims 4 and 8 *positively* require the moving-head-type microactuator on the slider (11), Mei et al. (US 6,611,399 B1) discloses such a conventional moving-head-type microactuator.

Given the express teachings and motivations, as espoused by Mei et al. (US 6,611,399 B1), it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the moving-head-type microactuator as taught by Mei et al. (US 6,611,399 B1), with the shroud covering of Koshikawa (JP 01-158605 A) in order to allow fine-tuned vertical and lateral head displacement at the slider level, as advantageously disclosed by Mei et al. (US

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6,611,399 B1), while simultaneously obstructing the convergence of leakage flux from outside of a magnetic pole associated with the slider, as espoused by Koshikawa (JP 01-158605 A).

The Applicant's statement that "[a]n airflow shroud is very different from a magnetic flux shroud" is well taken; it is noted however, that the structure set forth in claims 4 and 8 simply reads on the structure disclosed by Koshikawa (JP 01-158605 A).

In *In re Schreiber*, 44 USPQ 1429 (Fed. Cir. 1997), the CAFC ruled that a *prima facie* case of limitation anticipation exists where the prior art contains all the claimed structural limitations and the claimed functional limitations are inherent in the prior art structure even though the claimed invention recites a new and entirely different use. In the *Schreiber* case, a rejection of a dispensing top for popped popcorn was held to be anticipated by a similar structure for a completely different use (an oil can dispenser).

Moreover still, Koshikawa et al. (JP 01-158605 A) clearly discloses that the load beam is not surrounded by said airflow shroud. See FIGS. 1-2 of Koshikawa et al. (JP 01-158605 A).

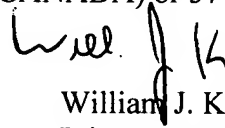
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William J. Klimowicz whose telephone number is (571) 272-7577. The examiner can normally be reached on Monday-Friday (7:30AM-6:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R. Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



William J. Klimowicz  
Primary Examiner  
Art Unit 2627

WJK